

REMARKS

Favorable reconsideration of this application is respectfully requested in light of the following remarks.

Summary of Examiner Interview

As an initial matter, Applicants express gratitude to Examiner Weeks for the courtesies extended Applicants' attorney during the recent interview of March 23, 2010. During the interview, the Examiner and Applicants' attorney discussed the differences between the claimed invention and the cited prior art. Specifically, the Examiner agreed that the cited art U.S. Patent No. 4,074,771 to Morrison ("*Morrison*") discloses a single pump with three stages and not "at least one separate hydraulic circuit . . . each having a separate hydraulic pump" as recited in claim 26. The Examiner alleged that the three stage single pump of *Morrison* was structurally or at least functionally the same as three separate pumps. However, after further discussion, the Examiner agreed that the three stage single pump of *Morrison* was merely a single pump with three outputs all functioning dependently on the single pump. It was further explained that the single pump of *Morrison* is not functionally equivalent to the separate pumps claimed. Specifically, it was explained that if *Morrison* adjusted the pump output the output of all three stages would be automatically adjusted the same percentage. Thus, changing the pumping output in *Morrison* could not adjust the power of the mining actuators independently, instead all of the actuators would be affected. Because of this limitation on a single pump, *Morrison* utilizes a complex system of valves downstream of the hydraulic circuits to adjust hydraulic power to the individual mining actuators. *See, e.g.*, Fig. 1 and col. 5, ll. 27-53. In contrast, claim

26 recites that “the power of the mining actuator connected to the separate hydraulic circuit is arranged to be adjusted by adjusting the generated hydraulic power by adjusting pumping output of the hydraulic pump of the separate hydraulic circuit.” (emphasis added). Based on this discussion, the Examiner appeared to agree that the single pump of *Morrison* was structurally and functionally different than the multiple pumps of claim 26. Thus, the Examiner stated that the rejection will likely be withdrawn.

Summary of the Response

Claims 2-10 and 26 were pending in this application. In this response, no claim is amended, added, or canceled. Thus, claims 2-10 and 26 remain pending.

REJECTIONS UNDER 35 U.S.C. § 102

Claims 2-10 and 26 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by *Morrison*.

Applicants respectfully traverse the rejection. To establish a *prima facie* case of anticipation, a single prior art reference must teach each and every element of the claimed invention, either explicitly or inherently. *Verdegaal Bros. v. Union Oil Co. Cal.*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Claim 26 recites “at least one separate hydraulic circuit . . . each having a separate hydraulic pump.” *Morrison* at least fails to disclose this limitation, at least because *Morrison* discloses separate hydraulic circuits coming from one single hydraulic pump. *Morrison* fails to disclose each separate hydraulic circuit having a separate hydraulic pump. For at least this reason, not each and every element of the claimed invention is disclosed.

The Examiner alleges that *Morrison* discloses three separate pumps 38a, 38b, and 38c for separate hydraulic circuits. Further, the Examiner alleges that if stages 38a, 38b, and 38c are not actually separate pumps, they are either structurally or functionally the same as separate pumps. Each of these contentions are incorrect for at least the following reasons.

1. 38a, 38b, and 38c in *Morrison* are not separate pumps.

Morrison discloses a single uniform flow hydraulic pump having respective stages 38a, 38b, and 38c. *See, e.g.*, col. 2, ll. 40-43. The three stages are not separate pumps, but merely multiple outputs from a single pump.

2. The stages of the single pump of *Morrison* are not structurally or functionally equivalent to separate pumps.

There is a distinct structural and functional difference between multiple pumps and the single pump with multiple outputs or stages of *Morrison*. Multiple pumps can each be independently adjusted by adjusting the pumping output of the pump. In contrast, the single pump with multiple outputs or stages of *Morrison* produces the same percentage distribution of output from each stage as the pumping output of the single pump is adjusted. Individual stages of the single pump of *Morrison* cannot be independently adjusted by adjusting the pumping output of the pump.

This structural and functional difference renders the hydraulic system of *Morrison* incapable of meeting many of the other elements of claim 26. Specifically, *Morrison* fails to disclose that "the power of the mining actuator connected to the separate hydraulic circuit is arranged to be adjusted by adjusting the generated hydraulic power by adjusting pumping output of the hydraulic pump of the separate hydraulic circuit" as recited in claim 26. Instead, *Morrison*

discloses that a predetermined pumping output (20 gpm, 25 gpm, 15 gpm) is fed from a pump (38) to separate hydraulic circuits (40, 42, 44). *See, e.g.*, col. 5 ll. 12-68 and Figure 1.

In addition to not disclosing the above recited element of claim 26, the single pump with multiple stages of *Morrison* is incapable of adjusting the power of the mining actuator by adjusting pumping output of a hydraulic pump of a separate hydraulic circuit. *Morrison* is incapable at least because the separate outputs or stages of *Morrison* cannot be independently adjusted. Thus, in *Morrison* the power of mining actuators (20, 22, 18) are not adjusted by adjusting the pumping output. Instead, as can be seen in Figure 1, *Morrison* utilizes a plurality of different valves (30, 32, 34, 48, 62, 76, 90, etc.) by means of which pressure and flow acting in the hydraulic circuits are affected in order to adjust the hydraulic power of the mining actuators. Applicants avoid the need for the complex system of valves of *Morrison* to adjust the hydraulic power of the mining actuators by having separate hydraulic circuits each with a separately operable hydraulic pump. For at least the above reasons, the single pump with multiple stages of *Morrison* is not structurally or functionally equivalent to the multiple separate pumps recited in claim 26. Therefore, at least because *Morrison* fails to disclose more than one separate pump as recited in claim 26, no *prima facie* case of anticipation is established.

3. There are additional elements in claim 26 that re not disclosed in *Morrison*.

Morrison further fails to disclose that "the hydraulic pump of the separate hydraulic circuit is controlled by means of a control unit including an adjustment strategy." In *Morrison*, the pump (38) is not controlled by any control unit. The pump in *Morrison* maintains a constant flow rate from each of the stages, and different flow rates to the individual mining actuators are controlled by the valve system downstream from the pump. *See, e.g.*, col. 5, ll. 12-37.

Morrison also fails to disclose the features of Claim 26 defining that pressure of the fluid channel leading from the pump is monitored by means of a sensor, and that information on the volume flow obtained from the pump is also monitored. The Examiner states that reference numerals (118, 120) refer to flow sensors. However, in, for example, column 4, lines 35-39, it is disclosed that the feed control comprises a pair of sensor valves (118, 120) arranged at forward end and rearward end of the feed beam (16) and the valves are actuated by counter parts (122, 124) arranged in a drilling machine (14). The counter parts push the valves when the drilling machine is fed on the feed beam to its extreme positions. The operation of the valves (118, 120) is discussed more, for example, in column 7, lines 51-60, wherein it is explained that the valves are for detecting the position of the drilling machine on the feed beam and for reversing the feed direction based on the detected information. Nowhere does *Morrison* disclose that the sensor valves (118, 120) act as flow sensors.

Morrison further fails to disclose the last element of Claim 26 that "the power of the mining actuator of the rock drilling machine is controlled according to the pressure and flow information and the adjustment strategy." As it is already discussed above, there is no control device provided with a control strategy in *Morrison*. Further, there is no measurement of pressure and flow in *Morrison*. Therefore, *Morrison* further fails to disclose this element.

For at least the foregoing reasons, it is submitted that the system of independent Claim 26, and the claims depending therefrom, are patentably distinguishable from the applied documents. Accordingly, withdrawal of the rejections of record and allowance of this application are earnestly solicited.

Conclusion

Should any questions arise in connection with this application, or should the Examiner believe a telephone conference would be helpful in resolving any remaining issues pertaining to this application, it is respectfully requested that the undersigned be contacted at the number indicated below.

EXCEPT for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 50-0573. This paragraph is intended to be a CONSTRUCTIVE PETITION FOR EXTENSION OF TIME in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully Submitted,

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